



US011241234B2

(12) **United States Patent**
Guerrera et al.

(10) **Patent No.:** **US 11,241,234 B2**

(45) **Date of Patent:** **Feb. 8, 2022**

(54) **ANVIL ASSEMBLY WITH SELF-RETAINING
BACKUP MEMBER**

(58) **Field of Classification Search**
CPC A61B 17/1155; A61B 17/32053; A61B
2017/07257

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See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 52 days.

(21) Appl. No.: **16/451,118**

(22) Filed: **Jun. 25, 2019**

(65) **Prior Publication Data**

US 2020/0054336 A1 Feb. 20, 2020

Related U.S. Application Data

(60) Provisional application No. 62/718,486, filed on Aug.
14, 2018.

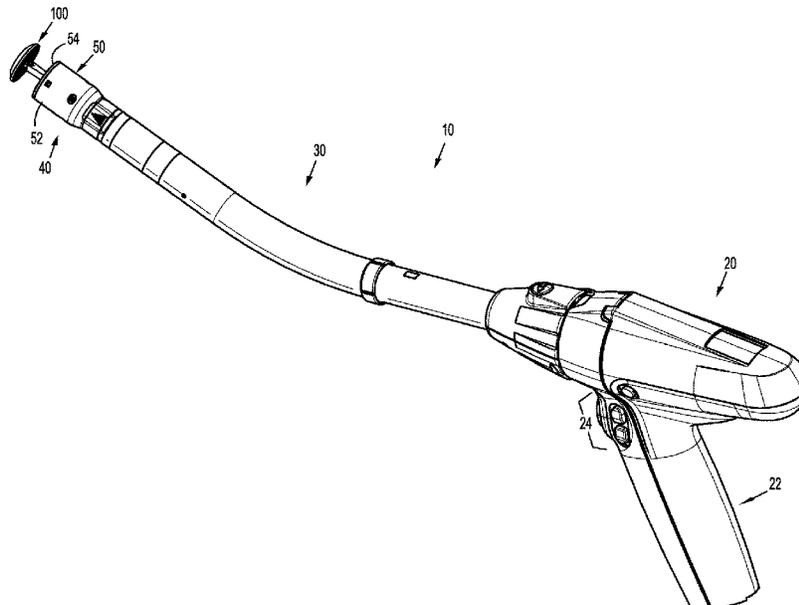
(51) **Int. Cl.**
A61B 17/068 (2006.01)
A61B 17/115 (2006.01)
A61B 17/00 (2006.01)
A61B 17/072 (2006.01)

(52) **U.S. Cl.**
 CPC . **A61B 17/1155** (2013.01); **A61B 2017/00314**
 (2013.01); **A61B 2017/07257** (2013.01); **A61B**
2017/07271 (2013.01); **A61B 2017/07285**
 (2013.01)

(57) **ABSTRACT**

An anvil assembly includes an anvil head pivotally secured to a center rod assembly and a self-retaining backup member disposed with the anvil head assembly. The backup member is moveable between a retracted position in which the anvil head assembly is retained in an operative position and an advanced position in which the anvil head assembly is moveable to a tilted position. The backup member includes a pair of opposed snap tabs for retaining the backup member in its advanced position, a plurality of fingers for engaging a frangible ring of a retaining member, and retaining features for securing a cut ring assembly to the backup member.

18 Claims, 12 Drawing Sheets



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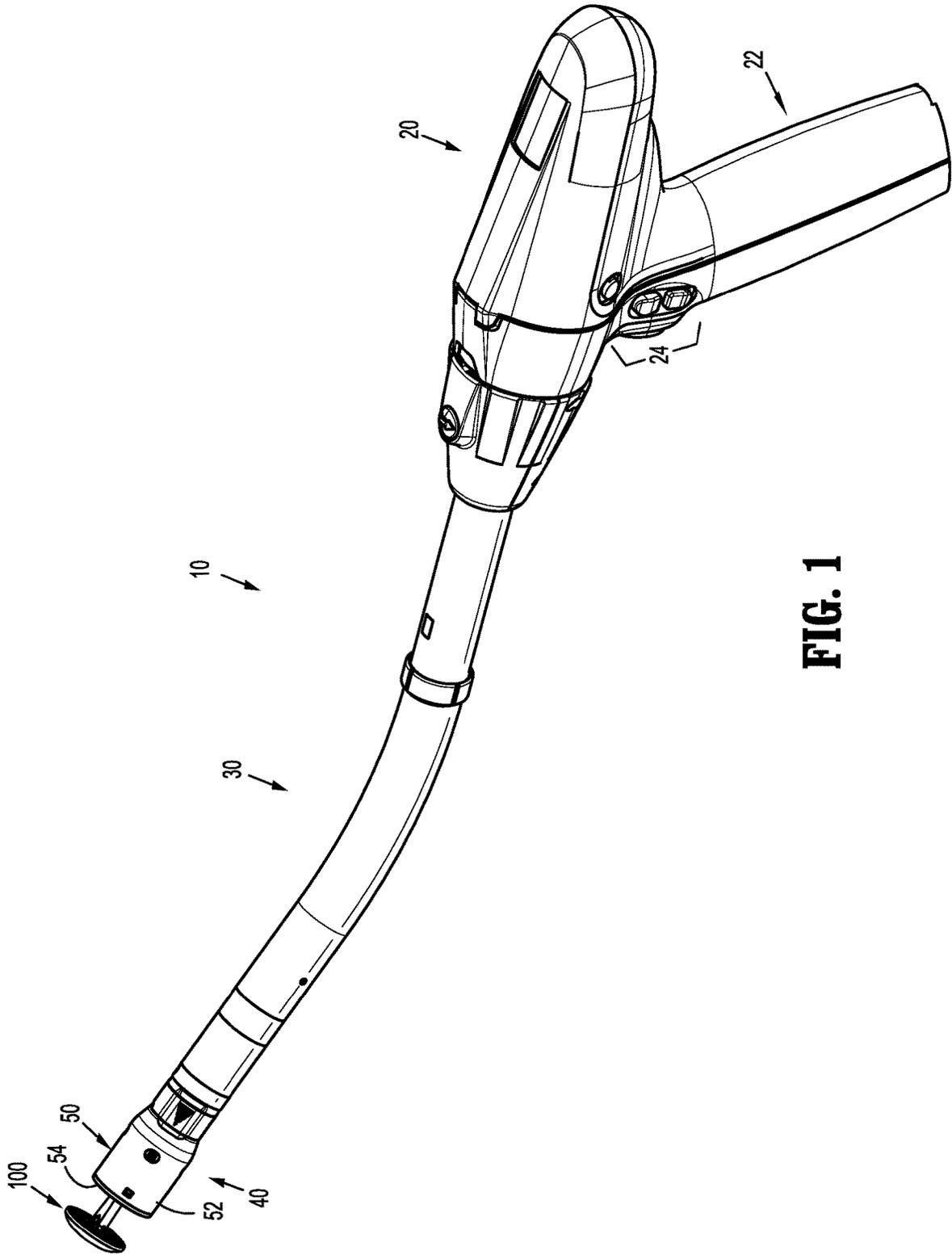


FIG. 1

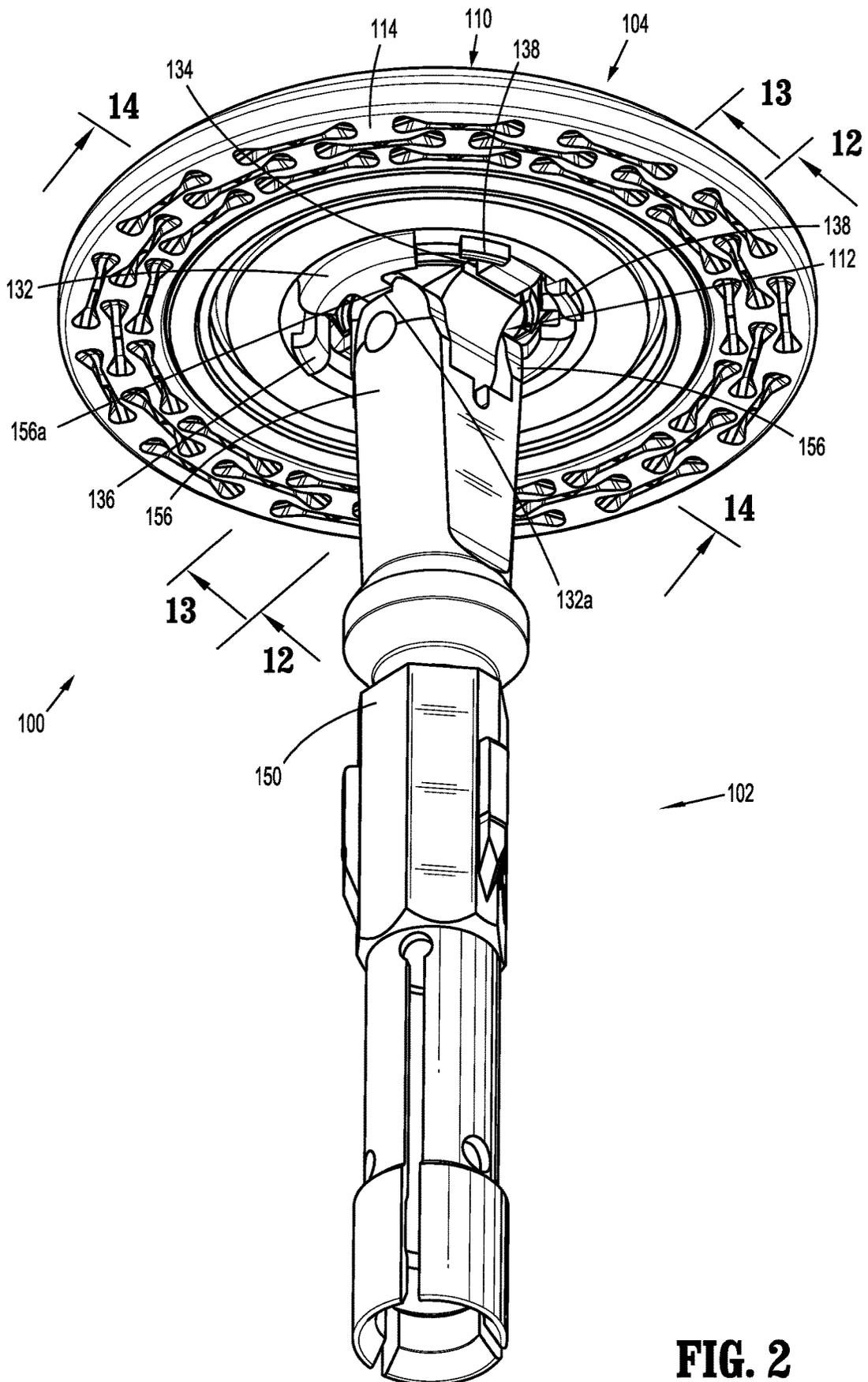


FIG. 2

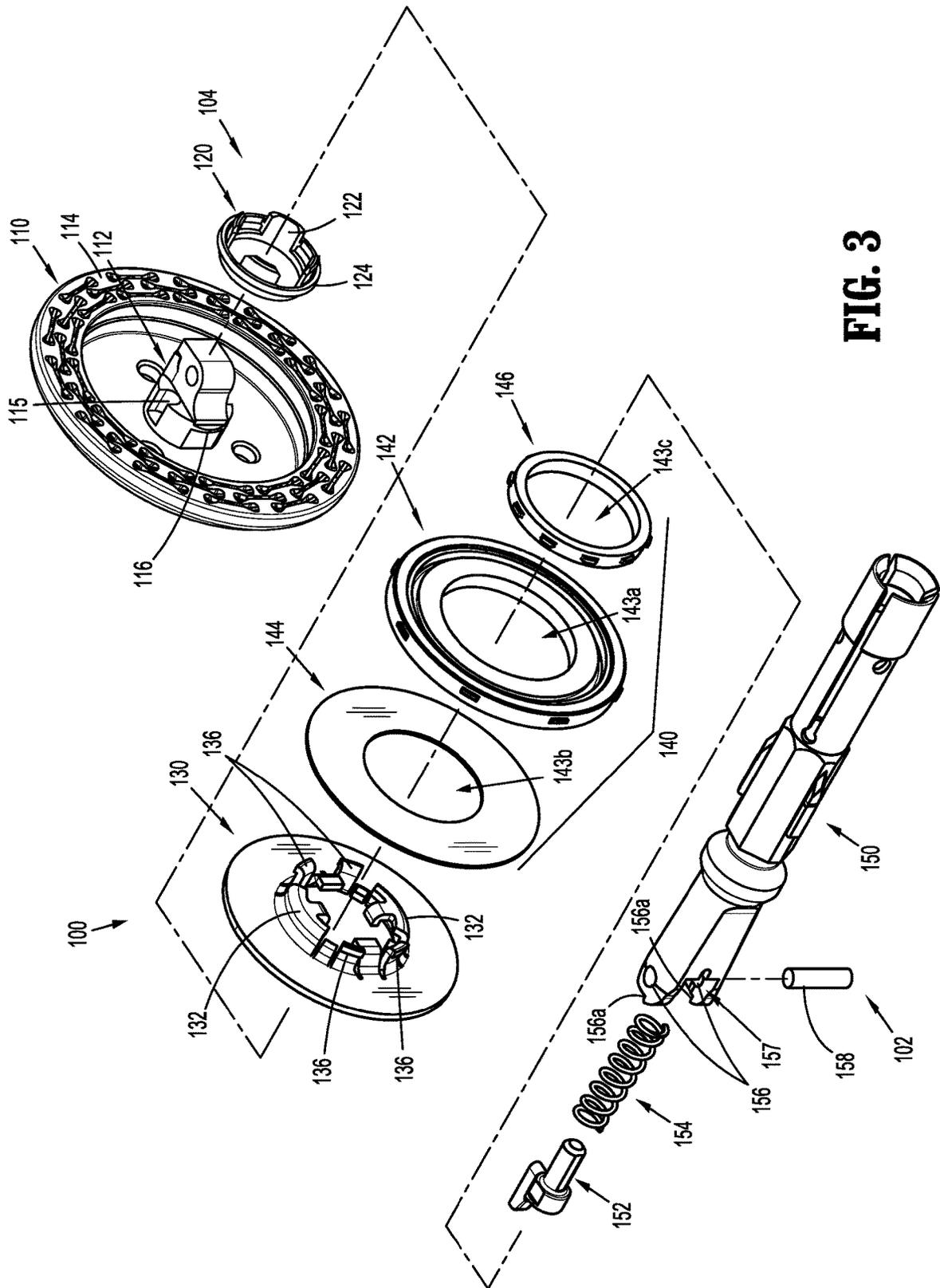


FIG. 3

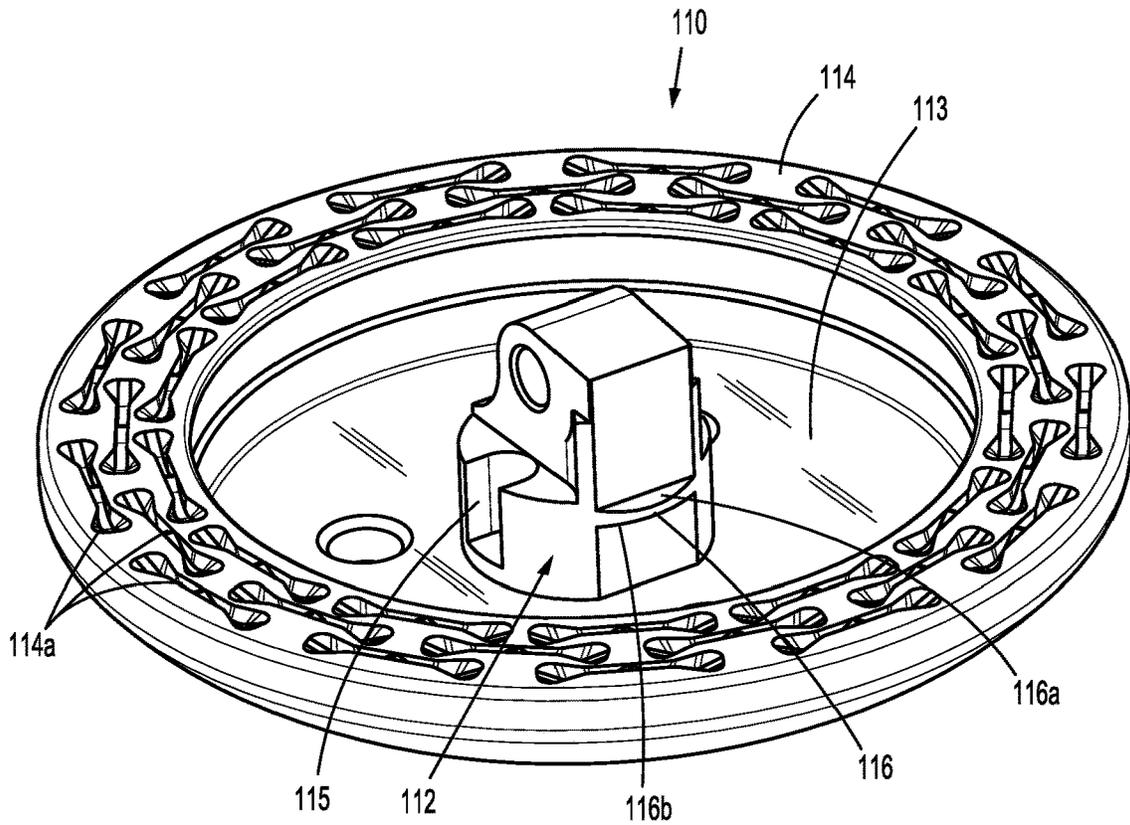


FIG. 4

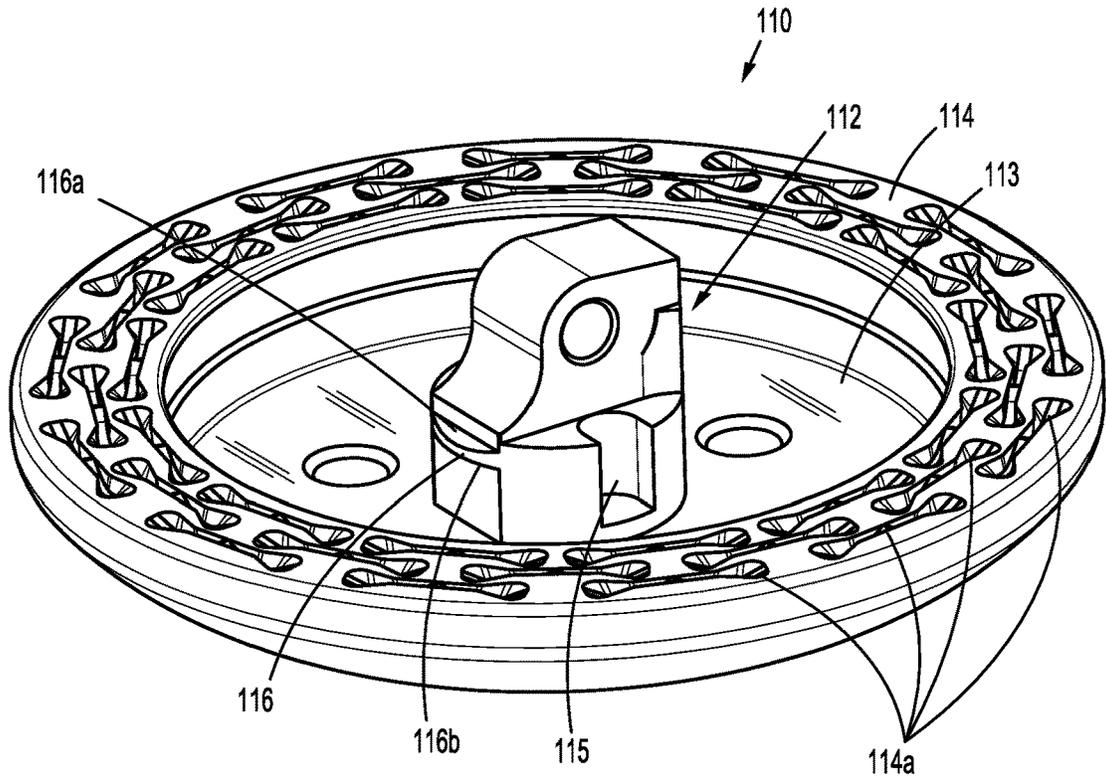


FIG. 5

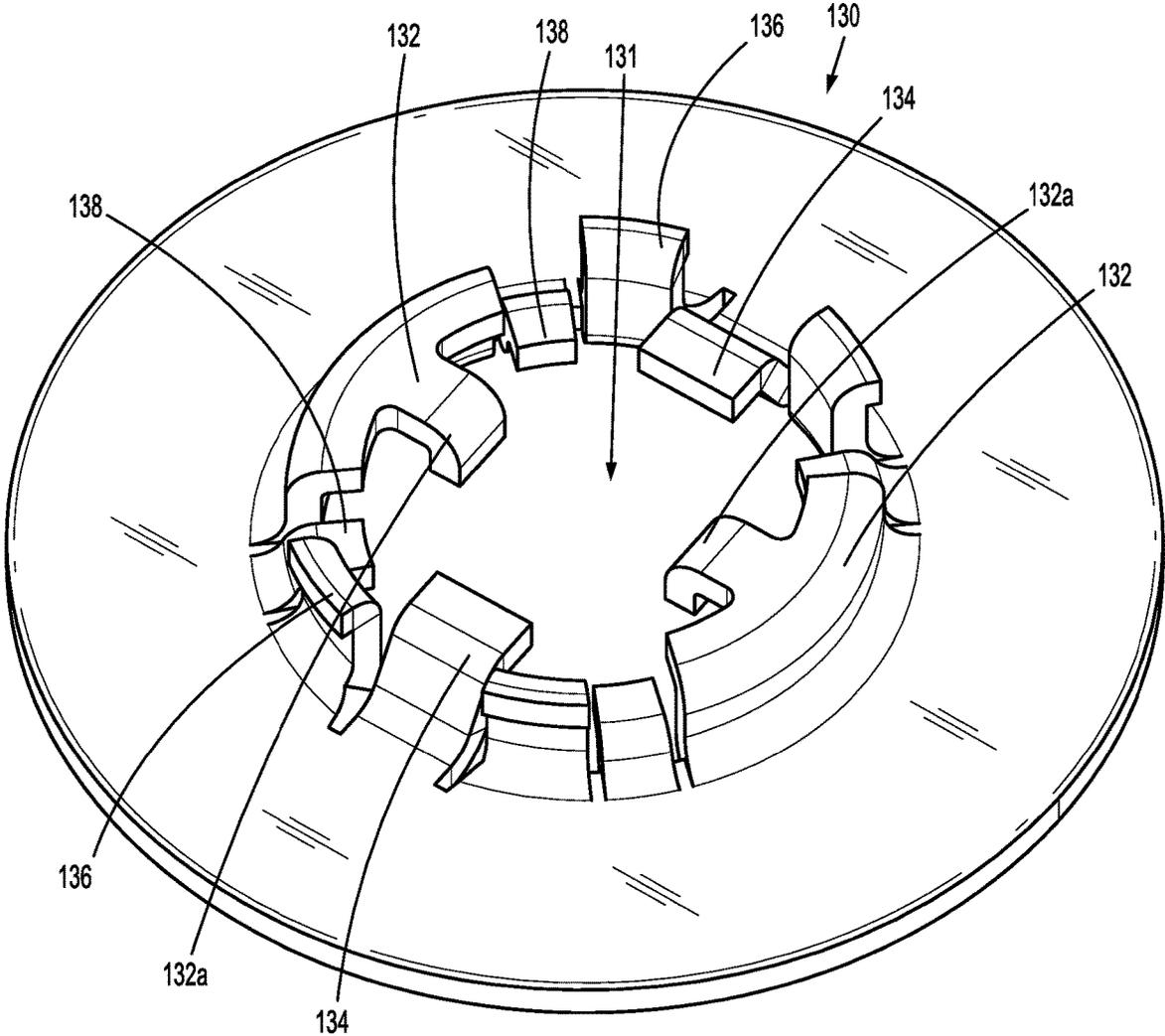


FIG. 6

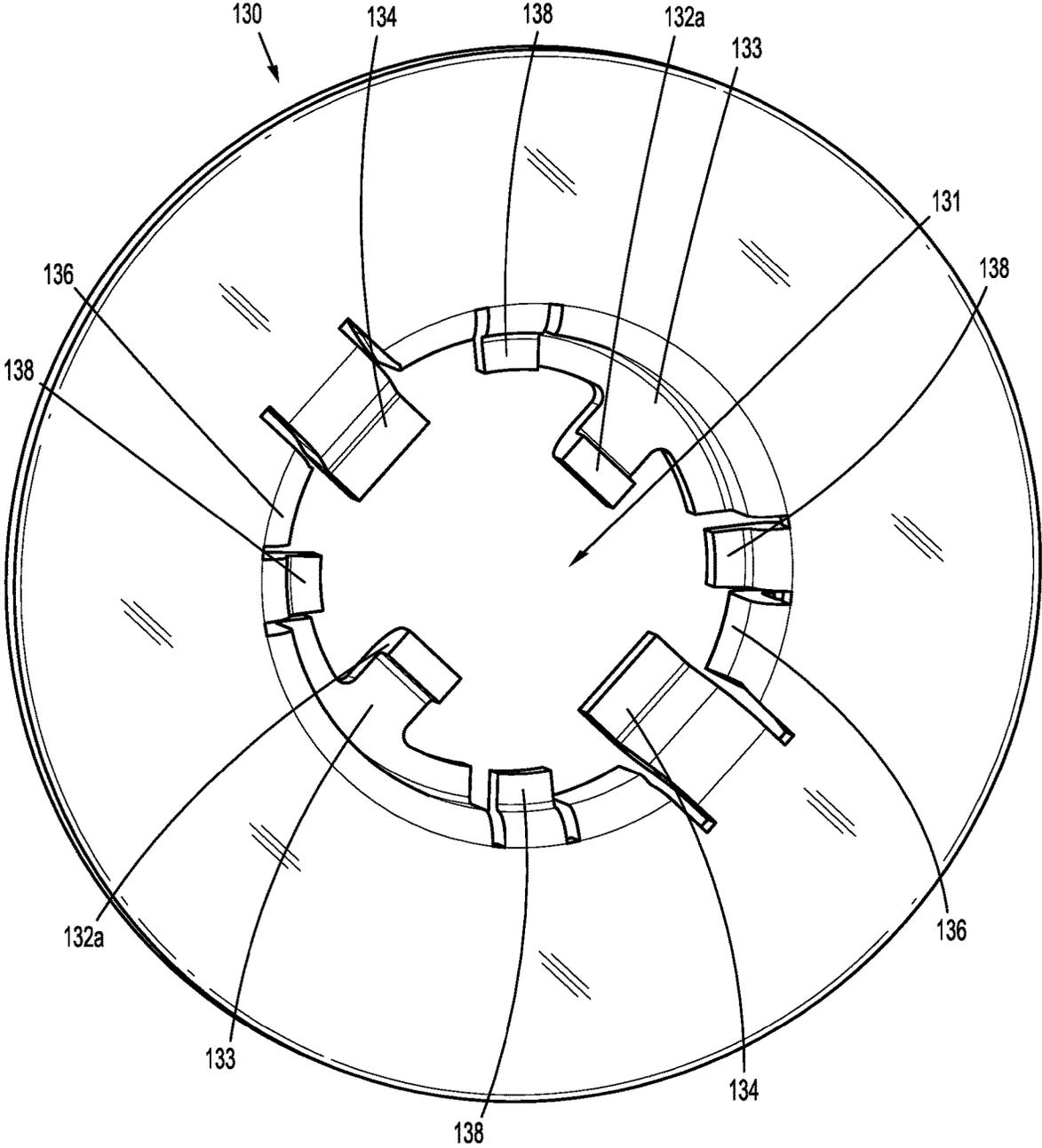


FIG. 7

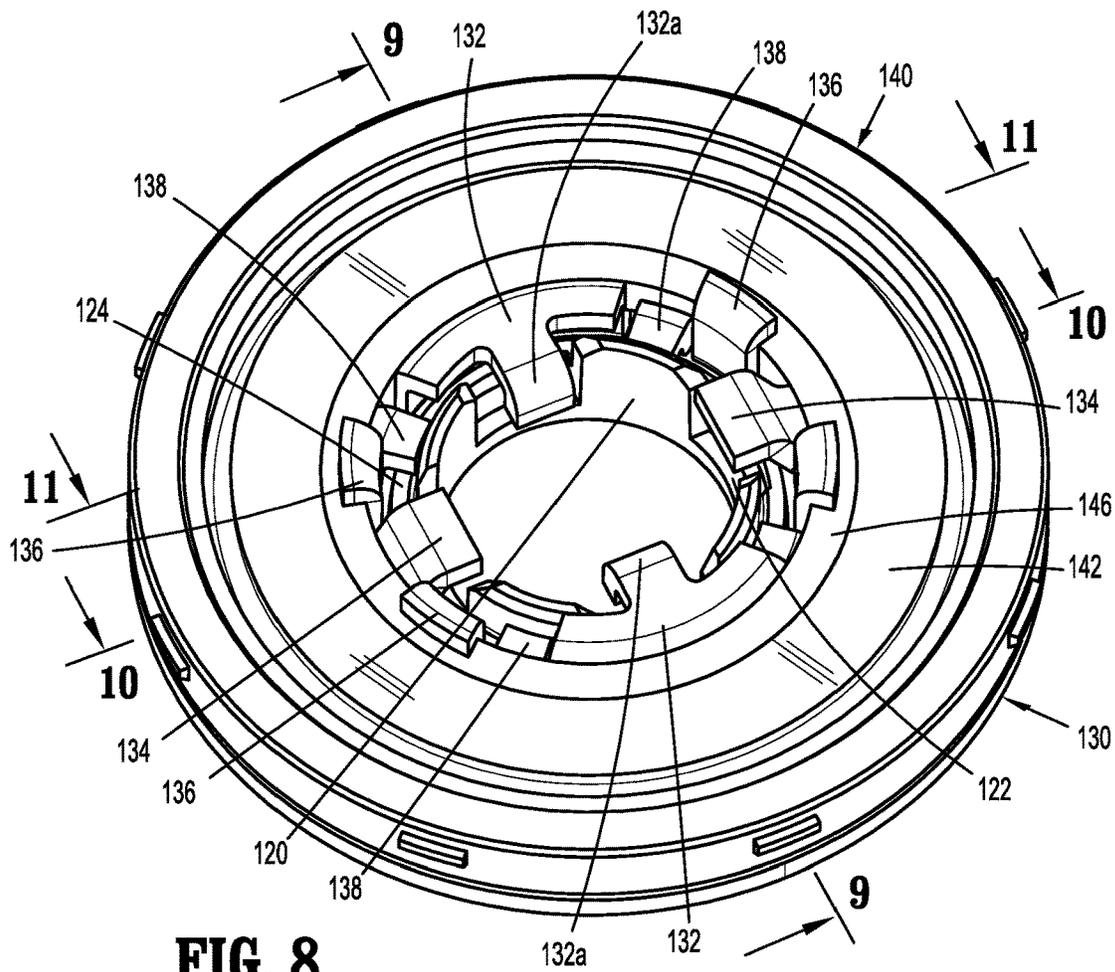


FIG. 8

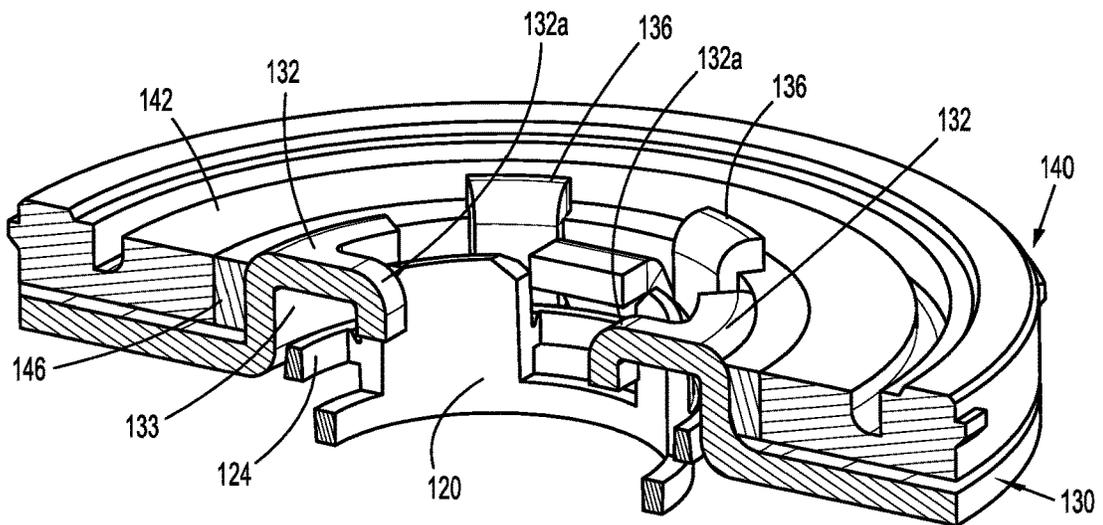


FIG. 9

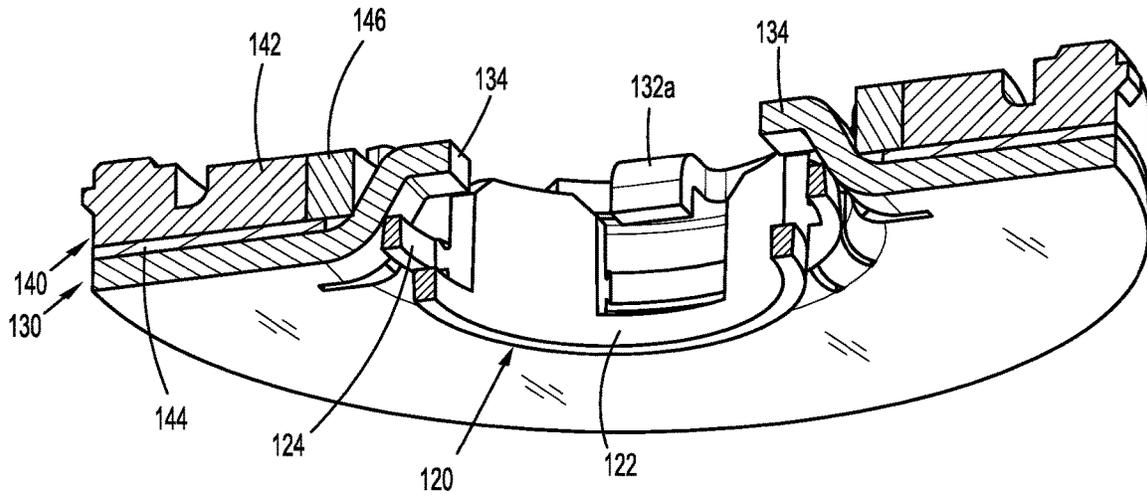


FIG. 10

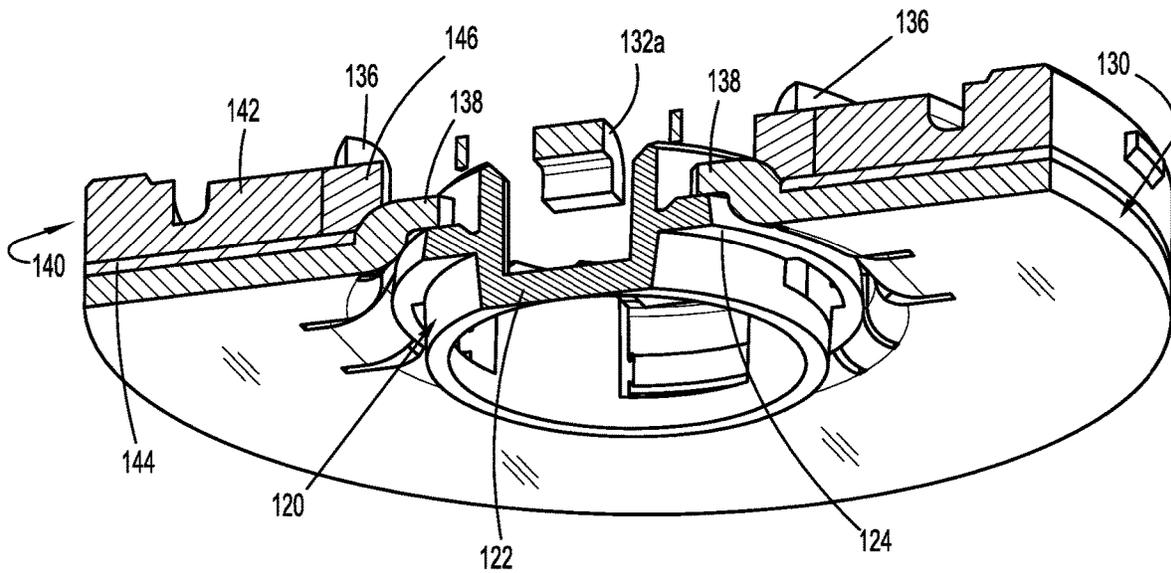


FIG. 11

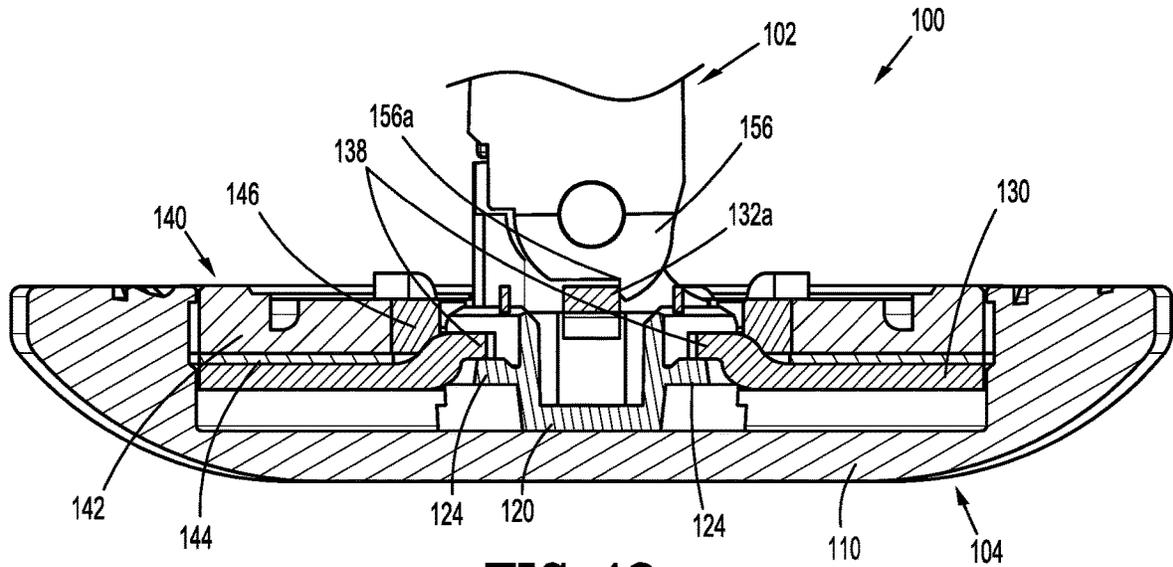


FIG. 12

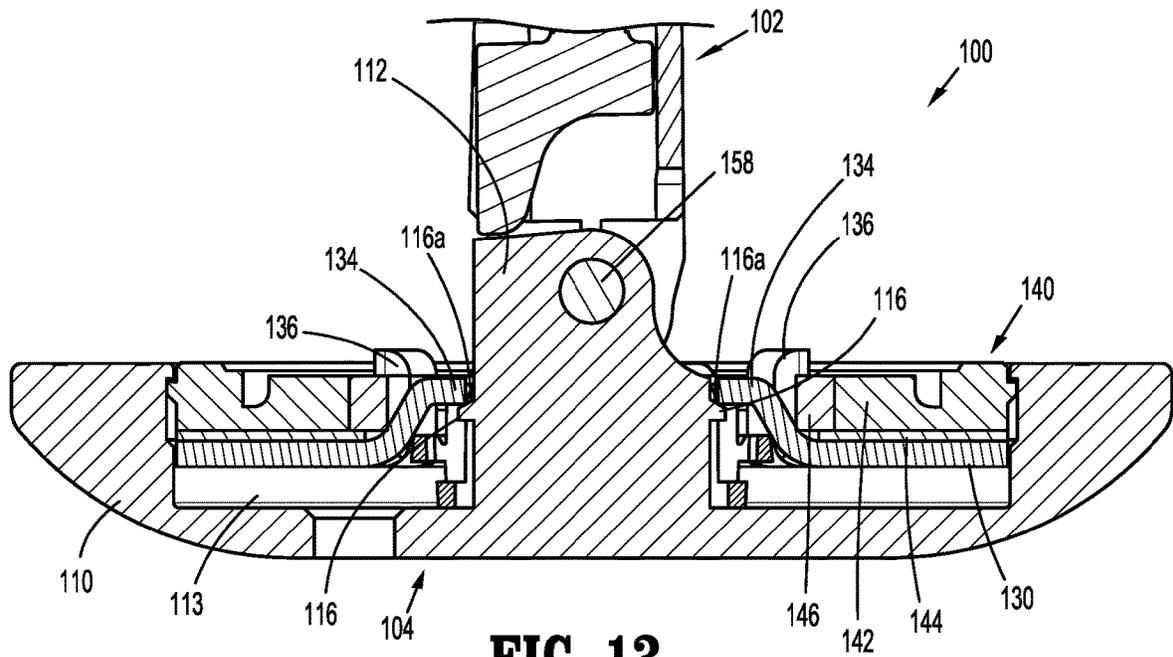


FIG. 13

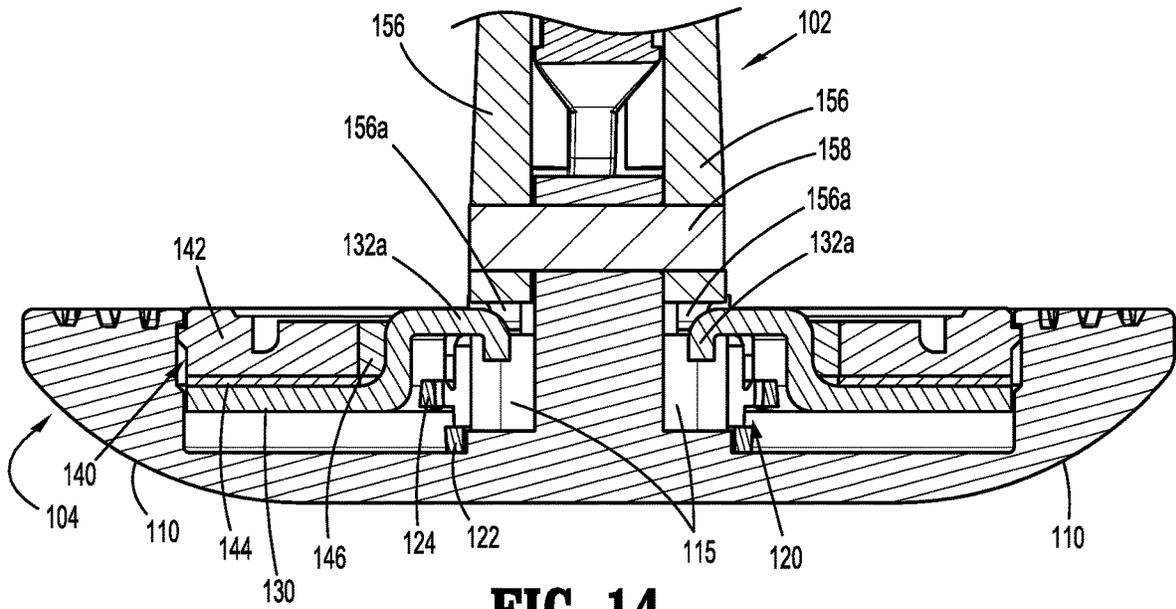


FIG. 14

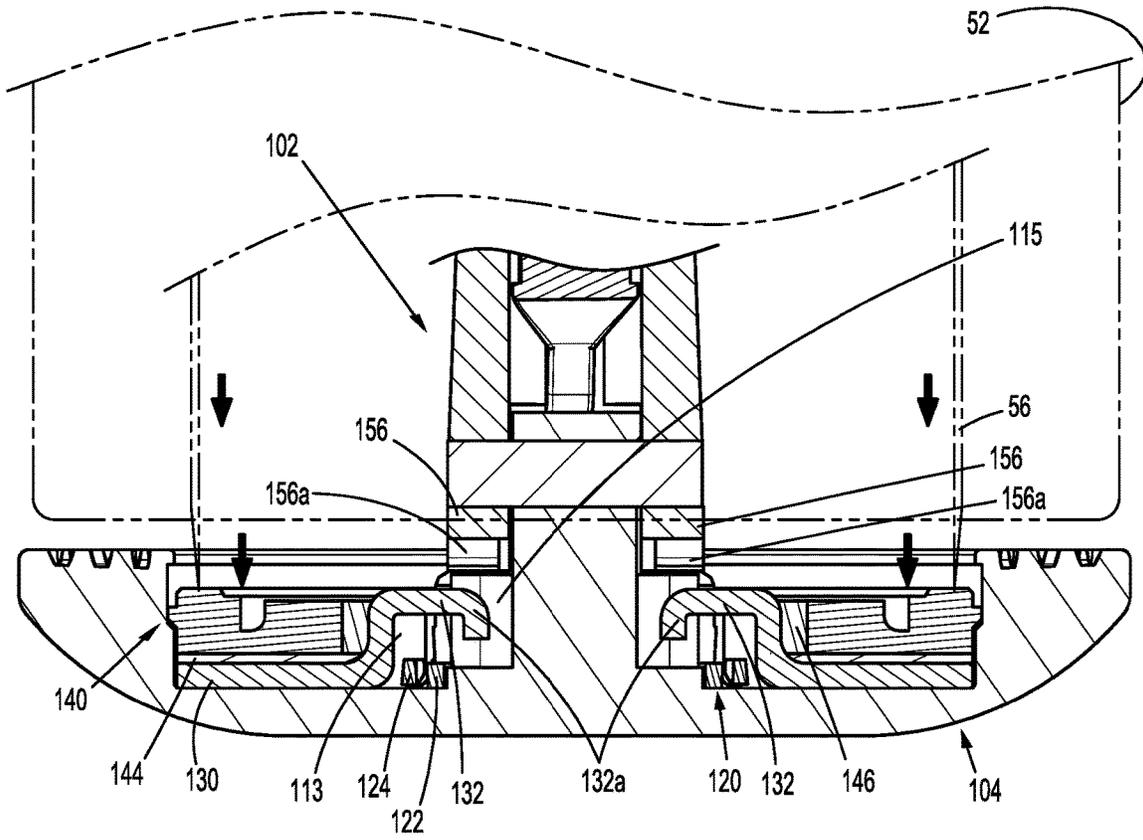


FIG. 14A

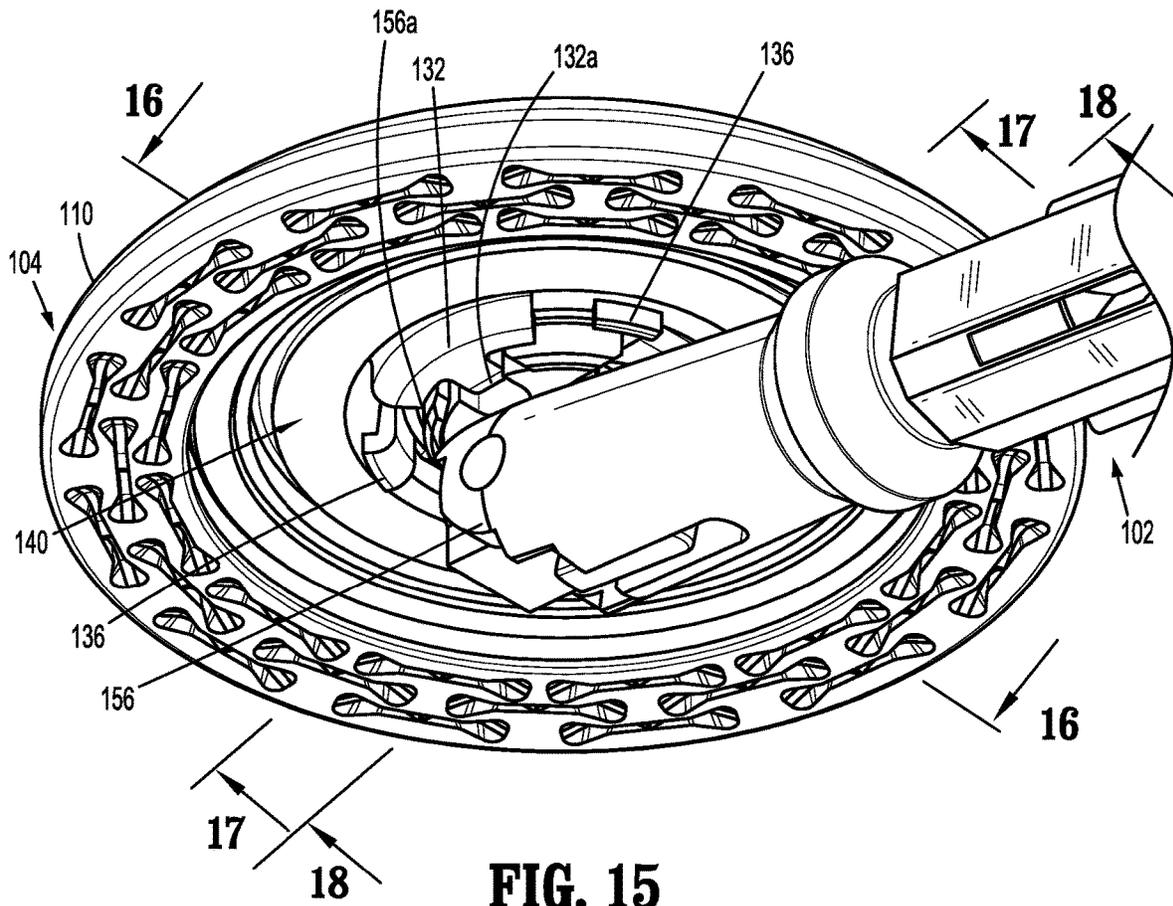


FIG. 15

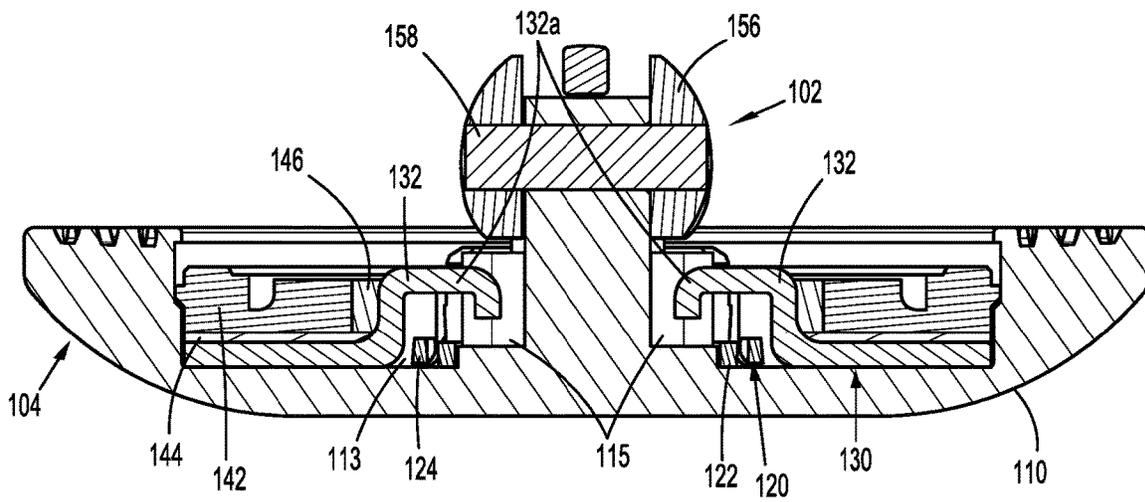


FIG. 16

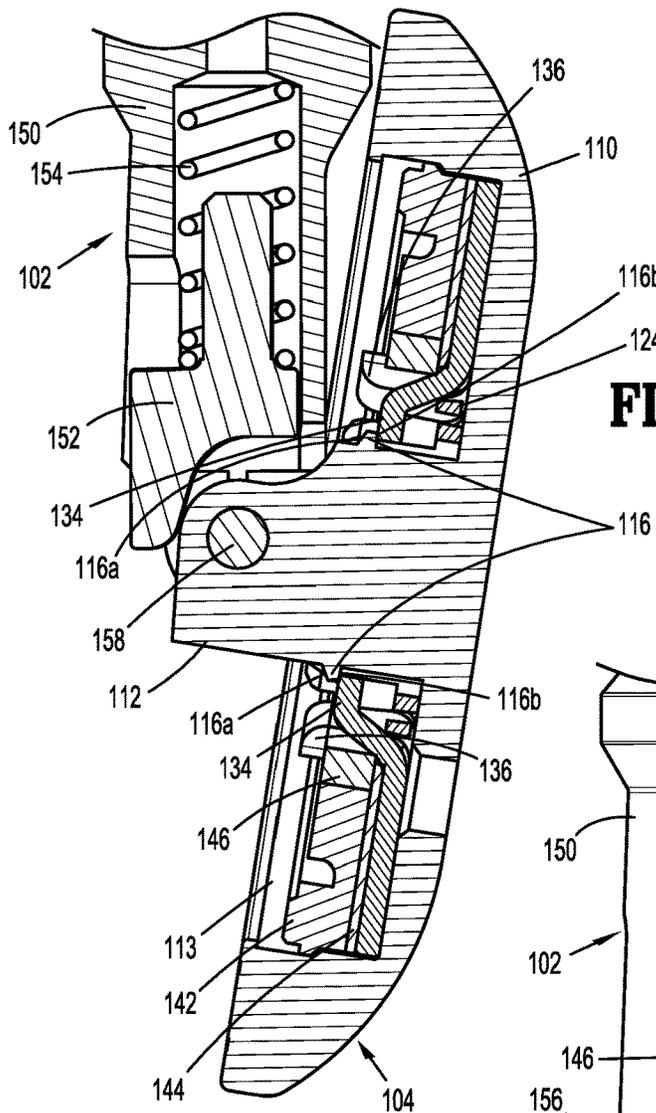


FIG. 17

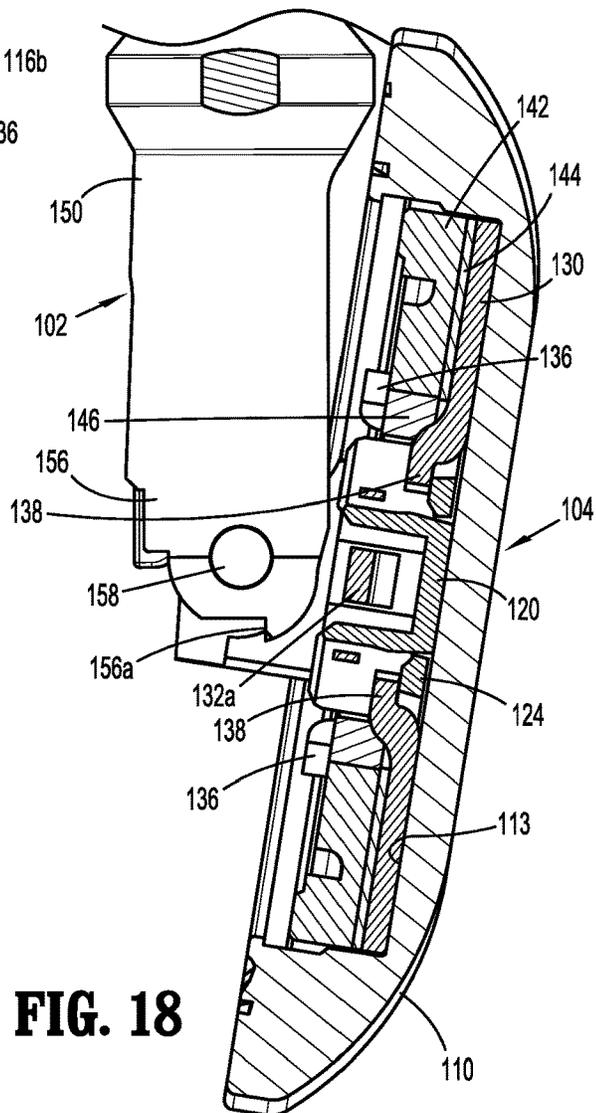


FIG. 18

ANVIL ASSEMBLY WITH SELF-RETAINING BACKUP MEMBER

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of and priority to U.S. Provisional Patent Application Ser. No. 62/718,486 filed Aug. 14, 2018, the entire disclosure of which is incorporated by reference herein.

BACKGROUND

Technical Field

The present disclosure relates generally to an anvil assembly having a tiltable head which is suitable for use with a circular anastomosis surgical stapling device. More specifically, the present disclosure relates to a tiltable anvil assembly having a self-retaining backup member.

Background of Related Art

Circular anastomosis surgical stapling devices which include an anvil assembly having a tiltable anvil head assembly are known in the art. An example of such a circular anastomosis surgical stapling device and tiltable anvil assembly is disclosed in commonly owned U.S. Pat. No. 7,364,060 (“the ‘060 patent”). A further example of a tiltable anvil assembly is disclosed in commonly owned U.S. Pat. No. 8,540,132 (“the ‘132 patent”). The contents of the ‘060 and ‘132 patents are incorporated herein by reference in their entirety. The anvil assembly described in the ‘132 patent includes a backup member located within the anvil assembly positioned to prevent tilting of the anvil head assembly of the anvil assembly prior to firing of the surgical stapling device. Upon firing of the surgical stapling device, a knife blade of the surgical stapling device engages and moves the backup member to a position which allows the anvil head assembly to tilt upon retraction of the knife blade. If the backup member sticks to the knife blade upon retraction of the knife blade, the backup member may return to its position preventing tilting of the anvil head assembly. When this occurs, the anvil head assembly will not tilt.

In order to maintain the backup member in a distal position post firing of the surgical stapling device, the anvil assembly described in the ‘132 patent includes a cam latch member that is pivoted into engagement with the backup member post firing to prevent retraction of the backup member. Providing a backup member that remains in the distal position post firing eliminates the need for a cam latch member, thereby reducing the number of components and reducing the manufacturing costs of the anvil assembly.

Therefore, it would be beneficial to provide an anvil assembly with a self-retaining backup member that maintains itself in the distal position post firing of the stapling assembly.

SUMMARY

Accordingly, an anvil assembly including a self-retaining backup member is provided. The anvil assembly includes a center rod assembly including an anvil center rod defining a longitudinal axis and having a proximal portion and a distal portion and an anvil head assembly pivotally secured to the distal portion of the anvil center rod. The anvil head assembly includes a housing, a backup member, a cut ring assembly,

and a retainer member. The housing defines a recess and includes a post centrally disposed within the recess. The anvil head assembly is pivotal in relation to the anvil center rod from an operative position in which the longitudinal axis of the anvil center rod is aligned with a longitudinal axis of the post to a tilted position in which the longitudinal axis of the anvil center rod and the longitudinal axis of the post define an acute angle. The backup member and cut ring assembly are supported about the post and movable between retracted and advanced positions. The retainer member is positioned about the post to retain the backup member in its retracted position until a predetermined force is applied to the retainer member by the backup member. When in its retracted position, the backup member is positioned to engage the center rod to retain the anvil head assembly in the operative position. When in its advanced position, the backup member is positioned to permit pivotal movement of the anvil head assembly to the tilted position. The backup member is configured to retain the cut ring assembly in its advanced position.

In embodiments, the housing includes a tissue contact surface defining a plurality of staple deforming pockets. The retainer member may include a frangible portion and a body portion. Separation of the frangible portion from the body portion may permit the backup member to move to from its retracted position to its advanced position.

The backup member may include retaining features for securing the cut ring assembly to the backup member. The post may define opposed retaining features and the backup member may include opposed snap tabs. The snap tabs may engage the retaining features when the backup member is in the advanced position to secure the backup member in the advanced position. Proximal facing surfaces of the retaining features may be tapered to facilitate passage of the snap tabs over the retaining features as the backup member moves to its advanced position. Distal facing surfaces of the retaining features may form a stop surface configured to engage the snap tabs of the backup member to retain the backup member in its advanced position.

In some embodiments, the backup member includes a plurality of fingers that engage the frangible portion of the retainer member. The backup member may include raised flanges. The cut ring assembly may be securely supported about the raised flanges. The center rod assembly may include a plunger and a plunger spring. The plunger spring may be positioned to urge the plunger towards the anvil head assembly to urge the anvil head assembly from the operative position towards the tilted position.

The backup member may include a pair of opposed engagement tabs positioned to engage the proximal portion of the anvil center rod when the backup member is in its retracted position. The anvil center rod may include a pair of spaced arms each having a distally facing flat. The distally facing flats may be positioned to engage the opposed engagement tabs of the backup member when the backup member is in its retracted position. The cut ring assembly may include an inner sleeve and a body. The inner sleeve and the body may each define a central opening. The inner sleeve may be secured within the central opening of the body. The central opening of the inner sleeve may be dimensioned to receive the raised flanges of the backup member. The cut ring assembly may include a base member that is positioned between a proximal surface of the body and a distal surface of the backup member. The backup member may be formed of metal.

BRIEF DESCRIPTION OF THE DRAWINGS

Various embodiments of the presently disclosed anvil assembly with self-retaining backup member are described herein below with reference to the drawings, wherein:

FIG. 1 is a side, perspective view of one embodiment of the presently disclosed surgical stapling device including an anvil assembly having a self-retaining backup member;

FIG. 2 is a perspective view of the anvil assembly shown in FIG. 1 with an anvil head assembly of the anvil assembly in an operative position;

FIG. 3 is a side perspective view of the anvil assembly shown in FIG. 2 with parts separated;

FIG. 4 is an enlarged, side perspective view of a housing of the anvil assembly shown in FIG. 2;

FIG. 5 is another enlarged, side perspective view of the housing shown in FIG. 4 rotated 90 degrees;

FIG. 6 is enlarged, perspective view from the distal end of a backup member of the anvil assembly shown in FIG. 2;

FIG. 7 is an enlarged view from the proximal end of the backup member shown in FIG. 6;

FIG. 8 is an enlarged perspective view from the distal end of a cut ring assembly, a retainer member, and the backup member of the anvil assembly shown in FIG. 2 in a pre-fired condition;

FIG. 9 is a cross-sectional view taken along line 9-9 shown in FIG. 8;

FIG. 10 is a cross-sectional view taken along line 10-10 shown in FIG. 8;

FIG. 11 is a cross-sectional view taken along line 11-11 shown in FIG. 8;

FIG. 12 is a cross-sectional view taken along line 12-12 shown in FIG. 2;

FIG. 13 is a cross-sectional view taken along line 13-13 shown in FIG. 2;

FIG. 14 is a cross-sectional view taken along line 14-14 shown in FIG. 2;

FIG. 14A is a cross-sectional view taken along line 14-14 shown in FIG. 2 with the cut ring assembly, the retainer member, and the backup member in a post-fired position;

FIG. 15 is a side perspective view of the anvil head assembly shown in FIG. 2 in a tilted position;

FIG. 16 is a cross-sectional view taken along line 16-16 shown in FIG. 15;

FIG. 17 is a cross-sectional view taken along line 17-17 shown in FIG. 15; and

FIG. 18 is a cross-sectional view taken along line 18-18 shown in FIG. 15.

DETAILED DESCRIPTION OF EMBODIMENTS

The presently disclosed surgical stapling device including a tiltable anvil assembly having a self-retaining backup member will now be described in detail with reference to the drawings in which like reference numerals designate identical or corresponding elements in each of the several views. In this description, the term “proximal” is used generally to refer to that portion of the device that is closer to a clinician, while the term “distal” is used generally to refer to that portion of the device that is farther from the clinician. In addition, the term “clinician” is used generally to refer to medical personnel including doctors, nurses, and support personnel.

The presently disclosed surgical stapling device includes a handle or actuator assembly, an elongate body or adapter, and a tool assembly coupled to a distal portion of the adapter. The tool assembly includes a tiltable anvil assembly and a

shell assembly. The anvil assembly includes a center rod that is releasably coupled to the adapter and an anvil head assembly that is pivotally coupled to the center rod. The anvil head assembly supports a cut ring assembly that is movable between a pre-fired or retracted position in which the cut ring assembly retains the anvil head assembly in an untilted or operative position and a second or advanced position in which the cut ring assembly is positioned to allow movement of the anvil head assembly to a tilted position. The anvil assembly also includes a retainer having a frangible portion that separates from a base portion to allow the cut ring assembly to move from the first position to the second position. In embodiments, the anvil head assembly includes a backup member that retains the cut ring assembly in the advanced position to allow the anvil head assembly to move to the tilted position and prevent retraction of the cut ring assembly.

Referring to FIG. 1, the presently disclosed surgical stapling device is shown generally as stapling device 10, and includes a handle or actuator assembly 20, an elongate body or adapter assembly 30, and a tool assembly 40. The handle assembly 20, as illustrated, is an electrically powered assembly and includes a grip 22 and actuation buttons 24 that can be depressed to actuate various functions of the stapling device 10 including approximation of the tool assembly 40 and firing of staples. In embodiments, the grip 22 supports a battery pack (not shown) which powers the handle assembly 20.

In embodiments, the adapter assembly 30 is releasably coupled to a distal portion of the handle assembly 20 and includes a plurality of drive mechanisms (not shown) that translate power from the handle assembly 20 to the tool assembly 40 in response to actuation of the actuation buttons 24 to effect operation, i.e., approximation and firing, of the tool assembly 40. The adapter assembly 30 also includes an anvil retainer (not shown) that extends from a distal portion of the adapter assembly 30 and is movable between retracted and advanced positions. U.S. Pat. Nos. 9,247,940, 9,055, 943, and 8,806,973, and U.S. Publication No. 2015/0014392 disclose exemplary embodiments of powered handle assemblies and adapter assemblies and are incorporated herein by reference in their entirety. Alternately, the elongate body or adapter assembly 30 can be non-removably secured to the actuator assembly 20.

It is also envisioned that the actuator assembly 20 could be manually powered. Examples of manually powered handle assemblies are described in U.S. Pat. Nos. 8,1409, 737, 8,424,535 ('535 patent) and U.S. Pat. No. 8,3100,295 which are incorporated herein in their entirety by reference.

The tool assembly 40 includes a shell assembly 50 and an anvil assembly 100. The shell assembly 50 includes a housing 52 that supports a staple cartridge 54 having an annular array of staple pockets (not shown) that support staples (not shown). The shell assembly 50 also includes components that facilitate firing of the staples from the staple cartridge 54 and an annular knife 56 (FIG. 14A; shown in phantom) that is movable from a retracted position recessed within the housing 52 to an advanced position extending into the anvil assembly 100. The '535 patent describes the components of a shell assembly suitable for use with the presently disclosed stapling device 10.

Referring to FIGS. 2 and 3, the anvil assembly 100 includes an anvil center rod assembly 102 and an anvil head assembly 104 that is pivotally supported on a distal portion of the anvil center rod assembly 102. The anvil head assembly 104 includes a housing 110 including a post 112 and an anvil tissue contact surface 114, a retaining member

120, a backup member 130, and a cut ring assembly 140. In embodiments, the housing 110, the post 112, and the anvil tissue contact surface 114 are monolithically formed. Alternatively, any one or all of the housing 110, the post 112, and the anvil tissue contact surface 114 may be formed separately and secured together using any known fastening technique including welding, crimping or the like.

With additional reference to FIGS. 4 and 5, the housing 110 of the anvil head assembly 104 defines a recess 113 (FIG. 4) disposed between the post 112 and the tissue contact surface 114, with the post 112 centrally located within the recess 113. The tissue contact surface 114 of the housing 110 faces a tissue contacting surface (not shown) of the staple cartridge 54 (FIG. 1) and includes a plurality of staple deforming pockets 114a for receiving and deforming staples ejected from the staple cartridge 54.

Referring also to FIG. 6, the post 112 of the anvil head assembly 104 defines a pair of opposed cutouts 115 and includes a pair of opposed retaining features 116. As described below, the cutouts 115 receive engagement tabs 132a of the backup member 130. The retaining features 116 engage snap tabs 134 of the backup member 130 when the backup member 130 is moved to a post-fired, advanced position to retain the backup member 130 in the advanced position. The retaining features 116 include an angled proximal facing surface 116a to facilitate passage of the snap tabs 134 of the backup member 130 over the retaining features 116 as the backup member 130 moves to an advanced position within the recess 113 as described below. The retaining features 116 further include a stop surface 116b configured to engage the snap tabs 134 of the backup member 130 when the backup member 130 is in the advanced position to retain the backup member 130 in the advanced position.

With reference to FIG. 3, the retainer member 120 of the anvil assembly 100 includes an annular body portion 122 and a frangible ring 124 supported on the annular body portion 120. The frangible ring 124 maintains the backup member 130 and the cut ring assembly 140 in a pre-fired, proximal position within the recess 113 until a predetermined force sufficient to fracture or separate the frangible ring 124 from the annular body portion 122 of the retainer member 120 is applied to the backup member 130 and cut ring assembly 140 by an annular knife 56 (FIG. 14A) of surgical stapling device 10 (FIG. 1). For a detailed description of the structure and function of an exemplary retainer member, please refer to U.S. Pat. No. 9,554,802 ("the '802 patent"), the content of which is incorporated herein by reference in its entirety.

With particular reference to FIGS. 6 and 7, the backup member 130 of the anvil assembly 100 defines a central opening 131 that is dimensioned to receive the post 112 (FIG. 4) of the housing 110 of the anvil assembly 100. The central opening 131 is dimensioned to facilitate movement of the backup member 130 about the post 112 from the pre-fired, retracted position to the post-fired, advanced position within the recess 113 of the housing 110 as discussed in further detail below.

The backup member 130 includes a pair of raised flanges 132 that are positioned about the opening 131. The raised flanges 132 each define a recess 133 (FIG. 7) that accommodates the retaining member 130. The raised flanges 132 each include an engagement tab 132a that extends inwardly into central opening 131. The engagement tabs 132a are positioned to engage a distal portion of the center rod assembly 102 (FIG. 3) of the anvil assembly 100 when the backup member 130 is in its retracted position, to maintain

the anvil head assembly 104 in the operative position. The engagement tabs 132a are positioned to be received within the cutouts 115 in the post 112 when the backup member 130 is moved to the post-fired, advanced position such that the engagement tabs 132a disengage from the distal portion of the center rod assembly 102 to allow the anvil head assembly 104 to pivot in relation to the center rod assembly 102. In embodiments, the engagement tabs 132a are bent ninety degrees (90°) to increase the structural integrity of the engagement tabs 132a.

The backup member 130 further includes snap tabs 134 for retaining the backup member 130 in the post-fired, advanced position. When the backup member 130 is moved to the advanced position, the snap tabs 134 are aligned with the retaining features 116 of the post 112 and engage the retaining features 116 of the post 112 when the backup member 130 is moved towards its retracted position. The backup member 130 also includes a plurality of cut ring retaining features 136 for retaining the cut ring assembly 140 in engagement with the backup member 130. In addition, the backup member 130 includes a plurality of retaining fingers 138 that engage the frangible ring 124 of the retainer member 120 as will be described below.

In embodiments, the backup member 130 is stamped from sheet metal, although other materials of construction and manufacturing techniques are envisioned. U.S. Pat. No. 8,540,132 which is incorporated herein in its entirety by reference discloses a tiltable anvil assembly that includes a backup member and cut ring assembly that are movably positioned about a post of an anvil head assembly.

With reference again to FIG. 3, in embodiments, the cut ring assembly 140 includes an annular body 142 formed of a first material, an annular base member 144 formed of a second material, and an annular inner sleeve 146. The body 142, the base member 144, and the sleeve 146 of the cut ring assembly 140 define openings 143a-c, respectively, that are configured to receive the raised flange 132 of the backup member 130. The sleeve 146 is secured to the body 142 and is positioned about the raised flange 132 of the backup member 130. The cut ring assembly 140 is secured the backup member 130 by the cut ring retaining features 136 of the backup member 130. In this manner, movement of the backup member 130 between its retracted and advanced positions causes corresponding movement of the cut ring assembly 140.

It is envisioned that a variety of cut ring assemblies can be included in the presently disclosed anvil head assembly. For example, the cut ring assembly need not include a sleeve and/or a base member 144.

For detailed description of the structure and operation of an exemplary cut ring assembly, please refer to commonly owned U.S. patent application Ser. No. 15/847,979, filed Dec. 20, 2017, the content of which is incorporated herein by reference in its entirety.

The center rod assembly 102 of the anvil assembly 100 includes a center rod 150, a plunger 152, and a plunger spring 154. A first end of center rod 150 includes a pair of spaced arms 156 that define a cavity 157 dimensioned to receive the post 112 of the anvil head assembly 104. The post 112 of anvil head assembly 104 is dimensioned to be positioned within cavity 157 defined between the spaced arms 156 of the center rod 150 and is pivotally secured to the center rod 150 by a pivot member 158. The anvil head assembly 104 is pivotable in relation to the center rod 150 between an operative position (FIG. 2) and a tilted position (FIG. 15). Each of the spaced arms 156 has distally facing flat 156a formed on the distal end of the center rod 150 that

is dimensioned to engage the engagement tabs **132a** of the backup member **130** when the backup member **130** is in its retracted position to releasably retain the anvil head assembly **104** in the operative position as discussed in further detail below.

The plunger **152** is urged by the plunger spring **154** into engagement with a proximal end of the post **112** of the anvil head assembly **104** to urge the anvil head assembly **104** about the pivot member **158** towards the tilted position (FIG. **12**).

Referring to FIGS. **8-14**, prior to firing of the stapling device **10** (FIG. **1**), the backup member **130** and the cut ring assembly **140** are in their retracted positions with the cut ring assembly **140** supported about the raised flange **132** of the backup member **130** and secured to the backup member **130** by cut ring retaining features **136**. The retainer member **120** is received with the recesses **133** of the raised flange **132** with the plurality of retaining fingers **138** of the backup member **130** engaging the frangible ring **124** of the retainer member **120** to maintain the backup member **130** in the retracted position.

With the backup member **130** in its retracted position, the inwardly extending engagement tabs **132a** of the backup member **130** engage the distally facing flats **156a** (FIG. **12**) of the center rod **150** such that the anvil head assembly **104** is prevented from tilting and is retained in the operative position. As discussed above, the plunger **152** of the center rod assembly **102** is positioned to urge the anvil head assembly **104** about the pivot member **158** towards the tilted position (FIG. **15**).

Referring to FIGS. **15-18**, when the stapling device **10** (FIG. **1**) is approximated and subsequently fired, the annular knife **56** (FIG. **14A**) of the shell assembly **50** is advanced from a retracted position recessed within the housing **52** of the shell assembly **50** to an advanced position extending into the cut ring assembly **140** of the anvil head assembly **104**. As the annular knife **56** engages the cut ring assembly **140**, the force applied to the cut ring assembly **140** by the knife **56** is transferred through the backup member **130** to the frangible ring **124** of the retainer member **120** by the plurality of retaining fingers **138** (FIG. **18**) of the backup member **130**. The force applied to the cut ring assembly **140** by the knife **56** separates the frangible ring **124** from the body portion **122** of the retainer member **120**, thereby releasing the backup member **130** and attached cut ring assembly **140**. In this manner, the cut ring assembly **140** and the backup member **130** are advanced from their retracted positions to their advanced positions within the recess **113** (FIG. **16**) of the housing **110** of the anvil head assembly **104**.

As discussed above, when the backup member **130** moves to its advanced position, the inwardly extending engagement fingers **132a** of the backup member **130** are moved to a position spaced from the distally facing flats **156a** (FIG. **18**) on the distal end of the center rod **150**. When the engagement tabs **132a** are spaced from the distally facing flats **156a**, and the stapling device **10** is moved to the spaced or unapproximated position in relation to the shell assembly **50**, the plunger spring **154** (FIG. **17**) urges the plunger **152** into the post **112** to urge the anvil head assembly **104** towards the tilted position.

As the backup member **130** is moved to the advanced position, the snap tabs **136** of the backup member **130** engage the angled surfaces **116a** of the retaining features **116** of the post **112** and are flexed radially outwardly to permit the snap tabs **136** to pass over the retaining features **116**. After passing distally over the retaining features **116**, the snap tabs **136** return to a non-flexed condition positioned

distally of the and in alignment with the retaining features **116** such that the snap tabs **136** engage the stop surface **116b** of the retaining features **116** and are blocked by the retaining features **116** to retain the backup member **130** and the attached cut ring assembly **140** in their advanced positions.

Subsequent to stapling tissue with the anvil assembly **100**, the surgical stapling procedure may be completed as described in the '132 patent.

Persons skilled in the art will understand that the devices and methods specifically described herein and illustrated in the accompanying drawings are non-limiting exemplary embodiments. It is envisioned that the elements and features illustrated or described in connection with one exemplary embodiment may be combined with the elements and features of another without departing from the scope of the present disclosure. As well, one skilled in the art will appreciate further features and advantages of the disclosure based on the above-described embodiments. Accordingly, the disclosure is not to be limited by what has been particularly shown and described, except as indicated by the appended claims.

What is claimed is:

1. An anvil assembly comprising:

a center rod assembly including an anvil center rod defining a longitudinal axis and having a proximal portion and a distal portion; and

an anvil head assembly pivotally secured to the distal portion of the anvil center rod, the anvil head assembly including a housing, a backup member, a cut ring assembly, and a retainer member, the housing defining a recess and including a post centrally disposed within the recess, the anvil head assembly being pivotal in relation to the anvil center rod from an operative position in which the longitudinal axis of the anvil center rod is aligned with a longitudinal axis of the post to a tilted position in which the longitudinal axis of the anvil center rod and the longitudinal axis of the post define an acute angle, the backup member and cut ring assembly being supported about the post and movable between retracted and advanced positions, the retainer member being positioned about the post to retain the backup member in its retracted position until a predetermined force is applied to the retainer member by the backup member, the retainer member including a frangible portion and a body portion, wherein separation of the frangible portion from the body portion permits the backup member to move from its retracted position to its advanced position, wherein in its retracted position, the backup member is positioned to engage the center rod to retain the anvil head assembly in the operative position, and in its advanced position, the backup member is positioned to permit pivotal movement of the anvil head assembly to the tilted position, wherein the backup member is configured to engage the housing when the backup member is in the advanced position to retain the cut ring assembly in its advanced position.

2. The anvil assembly of claim 1, wherein the housing includes a tissue contact surface defining a plurality of staple deforming pockets.

3. The anvil assembly of claim 1, wherein the backup member includes retaining features for securing the cut ring assembly to the backup member.

4. The anvil assembly of claim 3, wherein proximal facing surfaces of the retaining features are tapered to facilitate passage of the snap tabs over the retaining features as the backup member moves to its advanced position.

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5. The anvil assembly of claim 4, wherein distal facing surfaces of the retaining features form a stop surface configured to engage the snap tabs of the backup member to retain the backup member in its advanced position.

6. The anvil assembly of claim 1, wherein the post defines opposed retaining features and the backup member includes opposed snap tabs, the snap tabs engaging the opposed retaining features when the backup member is in the advanced position to secure the backup member in the advanced position.

7. The anvil assembly of claim 1, wherein the backup member includes a plurality of fingers that engage the frangible portion of the retainer member.

8. The anvil assembly of claim 1, wherein the backup member includes raised flanges, the cut ring assembly being securely supported about the raised flanges.

9. The surgical stapling device of claim 8, wherein the cut ring assembly includes an inner sleeve and a body, the inner sleeve and the body each defining a central opening, the inner sleeve being secured within the central opening of the body, wherein the central opening of the inner sleeve is dimensioned to receive the raised flanges of the backup member.

10. The surgical stapling device of claim 9, wherein the cut ring assembly includes a base member that is positioned between a proximal surface of the body and a distal surface of the backup member.

11. The anvil assembly of claim 1, wherein the center rod assembly includes a plunger and a plunger spring, the plunger spring being positioned to urge the plunger towards the anvil head assembly to urge the anvil head assembly from the operative position towards the tilted position.

12. The anvil assembly of claim 1, wherein the backup member includes a pair of opposed engagement tabs positioned to engage the distal portion of the anvil center rod when the backup member is in its retracted position.

13. The surgical stapling device of claim 12, wherein the anvil center rod includes a pair of spaced arms each having a distally facing flat, the distally facing flats being positioned to engage the opposed engagement tabs of the backup member when the backup member is in its retracted position.

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14. The surgical stapling device of claim 1, wherein the backup member is formed of metal.

15. An anvil assembly comprising:

a center rod assembly including an anvil center rod defining a longitudinal axis and having a proximal portion and a distal portion; and

an anvil head assembly pivotally secured to the distal portion of the anvil center rod, the anvil head assembly including a housing, a backup member, a cut ring assembly, and a retainer member, the housing defining a recess and including a post centrally disposed within the recess, the anvil head assembly being pivotal in relation to the anvil center rod from an operative position in which the longitudinal axis of the anvil center rod is aligned with a longitudinal axis of the post to a tilted position in which the longitudinal axis of the anvil center rod and the longitudinal axis of the post define an acute angle, the backup member and cut ring assembly being supported about the post and movable between retracted and advanced positions, the retainer member including a frangible portion and a body portion, wherein separation of the frangible portion from the body portion permits the backup member to move from its retracted position to its advanced position, wherein the backup member is configured to engage the housing when the backup member is in the advanced position to retain the cut ring assembly in its advanced position.

16. The anvil assembly of claim 15, wherein the backup member includes retaining features for securing the cut ring assembly to the backup member.

17. The anvil assembly of claim 16, wherein proximal facing surfaces of the retaining features are tapered to facilitate passage of the snap tabs over the retaining features as the backup member moves to its advanced position.

18. The anvil assembly of claim 15, wherein the post defines opposed retaining features and the backup member includes opposed snap tabs, the snap tabs engaging the opposed retaining features when the backup member is in the advanced position to secure the backup member in the advanced position.

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